

Inventor: Ronald E. Highsmith
Serial No: 09/855,480
Art Unit: 1724

Honeywell Docket No. H0001323
Bingham Docket No. 55-003-001

IN THE CLAIMS

Please cancel claims 12-19.

1. (Currently Amended) A beneficiated sludge solids composition characterized by its ability to reduce ammonia emissions, the composition [comprising] consisting essentially of:
digested municipal sewage sludge [containing carbonate or carbon dioxide];
ammonium sulfate;
mineral acid; and
phosphate salt[;
wherein the acid causes decomposition of the carbonate or carbon dioxide so that ammonia emissions are minimized].
2. (Original) *The beneficiated sludge solids composition of Claim 1, comprising on a water-free basis: about 10 wt.% to about 77 wt.% of said digested municipal sewage sludge; about 21 wt.% to about 88 wt.% of said ammonium sulfate; about 1 wt.% to about 12 wt.% of said mineral acid; and about 0.3 wt.% to about 6 wt.% of said phosphate salt.*
3. (Original) *The beneficiated sludge solids composition of Claim 1, comprising on a water-free basis: about 25 wt.% to about 75 wt.% of said digested municipal sewage sludge; about 23 wt.% to about 73 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.*
4. (Original) *The beneficiated sludge solids composition of Claim 1, comprising on a water-free basis: about 35 wt.% to about 70 wt.% of said digested municipal sewage sludge; about 28 wt.% to about 63 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.*

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5. (Original) *The beneficiated sludge solids composition of Claim 1, wherein the digested municipal sewage sludge is anaerobically digested.*
6. (Original) *The beneficiated sludge solids composition of Claim 1, wherein the mineral acid is at least one member selected from the group consisting of sulfuric acid and phosphoric acid.*
7. (Original) *The beneficiated sludge solids composition of Claim 1, wherein the phosphate salt is at least one member selected from the group consisting of ammonium metaphosphate (NH_4PO_3), ammonium monobasic phosphate ($\text{NH}_4\text{H}_2\text{PO}_4$), ammonium dibasic phosphate ($(\text{NH}_4)_2\text{HPO}_4$), ammonium polyphosphate ($(\text{NH}_4)_5\text{P}_3\text{O}_{10}$), trisodium phosphate (Na_3PO_4), tetrasodium pyrophosphate ($\text{Na}_4\text{P}_2\text{O}_7$), sodium tripolyphosphate ($\text{Na}_5\text{P}_3\text{O}_{10}$), hexasodium hexaphosphate ($\text{Na}_6\text{P}_6\text{O}_{18}$), potassium metaphosphate (KPO_3), potassium pyrophosphate ($\text{K}_4\text{P}_2\text{O}_7$), potassium monobasic phosphate (KH_2PO_4), potassium dibasic phosphate (KHPO_4), potassium tribasic phosphate (K_3PO_4) and calcium superphosphate ($\text{Ca}(\text{H}_2\text{PO}_4)_2$).*
8. (Previously Amended) *The beneficiated sludge solids composition of Claim 1, wherein the phosphate salt is at least one member selected from the group consisting of trisodium phosphate and sodium tripolyphosphate.*
9. (Original) *The beneficiated sludge solids composition of Claim 1, having a water content of between about 0 wt. % to about 10 wt. %.*
10. (Original) *The beneficiated sludge solids composition of Claim 1, having a water content of between about 0 wt. % to about 5 wt. %.*
11. (Original) *The beneficiated sludge solids composition of Claim 10 in granulated form.*

CLAIMS 12 - 29 (WITHDRAWN)

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PROPOSED ADDED CLAIMS

30. (Added) A beneficiated sludge solids composition characterized by its ability to reduce ammonia emissions, the composition comprising:
- digested municipal sewage sludge;
- ammonium sulfate;
- mineral acid; and
- phosphate salt;
- wherein the composition does not comprise formaldehyde, urea or a combination thereof.
31. (Added) The beneficiated sludge solids composition of Claim 30, comprising on a water-free basis: about 10 wt.% to about 77 wt.% of said digested municipal sewage sludge; about 21 wt.% to about 88 wt.% of said ammonium sulfate; about 1 wt.% to about 12 wt.% of said mineral acid; and about 0.3 wt.% to about 6 wt.% of said phosphate salt.
32. (Added) The beneficiated sludge solids composition of Claim 30, comprising on a water-free basis: about 25 wt.% to about 75 wt.% of said digested municipal sewage sludge; about 23 wt.% to about 73 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.
33. (Added) The beneficiated sludge solids composition of Claim 30, comprising on a water-free basis: about 35 wt.% to about 70 wt.% of said digested municipal sewage sludge; about 28 wt.% to about 63 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.

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34. (Added) The beneficiated sludge solids composition of Claim 30, wherein the digested municipal sewage sludge is anaerobically digested.
35. (Added) The beneficiated sludge solids composition of Claim 30, wherein the mineral acid is at least one member selected from the group consisting of sulfuric acid and phosphoric acid.
36. (Original) The beneficiated sludge solids composition of Claim 30, wherein the phosphate salt is at least one member selected from the group consisting of ammonium metaphosphate (NH_4PO_3), ammonium monobasic phosphate ($\text{NH}_4\text{H}_2\text{PO}_4$), ammonium dibasic phosphate ($(\text{NH}_4)_2\text{HPO}_4$), ammonium polyphosphate ($(\text{NH}_4)_5\text{P}_3\text{O}_{10}$), trisodium phosphate (Na_3PO_4), tetrasodium pyrophosphate ($\text{Na}_4\text{P}_2\text{O}_7$), sodium tripolyphosphate ($\text{Na}_5\text{P}_3\text{O}_{10}$), hexasodium hexaphosphate ($\text{Na}_6\text{P}_6\text{O}_{18}$), potassium metaphosphate (KPO_3), potassium pyrophosphate ($\text{K}_4\text{P}_2\text{O}_7$), potassium monobasic phosphate (KH_2PO_4), potassium dibasic phosphate (KHPO_4), potassium tribasic phosphate (K_3PO_4) and calcium superphosphate ($\text{Ca}(\text{H}_2\text{PO}_4)_2$).
37. (Added) The beneficiated sludge solids composition of Claim 30, wherein the phosphate salt is at least one member selected from the group consisting of trisodium phosphate and sodium tripolyphosphate.
38. (Added) The beneficiated sludge solids composition of Claim 30, having a water content of between about 0 wt.% to about 10 wt.%.
39. (Added) The beneficiated sludge solids composition of Claim 38, having a water content of between about 0 wt.% to about 5 wt.%.
40. (Added) The beneficiated sludge solids composition of Claim 39 in granulated form.
41. (Added) A beneficiated sludge solids composition characterized by its ability to reduce ammonia emissions, the composition comprising:
digested municipal sewage sludge;

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ammonium sulfate;

mineral acid; and

phosphate salt, wherein the salt is selected from the group of trisodium phosphate or sodium tripolyphosphate.

42. (Added) The beneficiated sludge solids composition of Claim 41, comprising on a water-free basis: about 10 wt.% to about 77 wt.% of said digested municipal sewage sludge; about 21 wt.% to about 88 wt.% of said ammonium sulfate; about 1 wt.% to about 12 wt.% of said mineral acid; and about 0.3 wt.% to about 6 wt.% of said phosphate salt.
43. (Added) The beneficiated sludge solids composition of Claim 41, comprising on a water-free basis: about 25 wt.% to about 75 wt.% of said digested municipal sewage sludge; about 23 wt.% to about 73 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.
44. (Added) The beneficiated sludge solids composition of Claim 41, comprising on a water-free basis: about 35 wt.% to about 70 wt.% of said digested municipal sewage sludge; about 28 wt.% to about 63 wt.% of said ammonium sulfate; about 2.5 wt.% to about 9 wt.% of said mineral acid; and about 0.5 wt.% to about 5 wt.% of said phosphate salt.
45. (Added) The beneficiated sludge solids composition of Claim 41, wherein the digested municipal sewage sludge is anaerobically digested.
46. (Added) The beneficiated sludge solids composition of Claim 41, wherein the mineral acid is at least one member selected from the group consisting of sulfuric acid and phosphoric acid.
47. (Added) The beneficiated sludge solids composition of Claim 41, having a water content of between about 0 wt.% to about 10 wt.%.